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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,629	04/12/2004	Andy D.C. Chan	CCDCC-204BX	3300
207	7590	11/03/2004	EXAMINER	
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP			VESTAL, REBECCA M	
TEN POST OFFICE SQUARE			ART UNIT	
BOSTON, MA 02109			PAPER NUMBER	

1753

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

## Application No.

10/822,629

## Applicant(s)

CHAN ET AL.

## Examiner

R. Michelle Vestal

## Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/12/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means for applying pressure of Claim 1 must be shown or the feature canceled from the claim. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The disclosure of a "means for applying pressure sufficient to maintain said liquid junction solution in contact with said constraint" is considered inadequate. The specification does not include relevant teaching nor does it provide an indication of the corresponding structure or equivalents thereof for implementing this function. Furthermore, as indicated previously, the drawings fail to illustrate this structural element.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,130,010 to McNeal, et al. in view of U.S. Patent No. 4,797,191 to Metzner et al. and "Experimental Electrochemistry for Chemists" by Sawyer et al., referred to hereafter as "McNeal," "Metzner" and "Sawyer," respectively.

McNeal discloses a modular reference electrode assembly (Figs. 1 and 2) adapted for serial integration within an orientation independent array of working electrodes (Col. 1, lines 24-28 and Col. 2, lines 31-35), said reference electrode comprising:

- (a) a flow cell (Fig. 2);
- (b) a liquid junction disposed within said flow cell (Figs. 2-4, 17);
- (c) a remote reservoir for holding a liquid junction solution (Col. 2, lines 42-43), said remote reservoir being connected to said flow cell by a liquid junction flow path (Fig. 2, 15 and 16), said liquid junction flow path being separate from the sample flow path (Fig. 2, 13);
- (d) a reference contact region in physical contact with said liquid junction solution (Col. 1, lines 59-64);
- (e) said liquid junction including a constraint having a region of porous material permeable to water and salts (Fig. 2, 17), said constraint having a contact portion adapted for contacting said liquid junction solution on one side thereof and a sample solution on another side thereof (Col. 1, lines 59-62);
- (f) said constraint adapted to substantially prevent bulk flow of said liquid junction solution there through, and to provide an orientation independent, stable liquid junction (Col. 2, lines 9-11); and
- (g) means for moving said liquid junction solution from said reservoir to said constraint (Col. 2, lines 42-43).

McNeal does not disclose expressly the following features:

- (a) the working electrodes are disposed in a plurality of electrode receiving positions on a support member of an integrated sample analyzer;
- (b) the flow cell is of modular construction, sized and shaped for selective disposition in any of the plurality of electrode receiving positions on the support member, wherein said flow cell is adapted for being serially retained within a sample flow path of the array; or
- (c) means for applying pressure sufficient to maintain said liquid junction solution in contact with said constraint at substantially any orientation of said array of electrodes wherein said flow cell is operable at substantially any orientation.

Metzner discloses an integrated sample analyzer with a flow cell (Col. 1, lines 6-14) comprising working electrodes that are disposed in a plurality of electrode receiving positions on a support member of an integrated sample analyzer (Figs. 7 and 8) and a reference electrode comprising a flow cell of modular construction, sized and shaped for selective disposition in any of the plurality of electrode receiving positions on the support member (Col. 13, lines 30-33 and Col. 13, line 66-Col. 14, line 7), wherein said flow cell is adapted for being serially retained within a sample flow path of the array (Figs. 7 and 9).

Sawyer discloses means for applying pressure to a liquid junction solution of a reference electrode (Page 29, lines 3-5).

McNeal, Metzner and Sawyer are analogous art because they are from the same field of endeavor, that is electrochemical sample analyzers.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the plurality of electrode receiving positions on a support member and the reference electrode with a flow cell of modular construction of the integrated sample analyzer of Metzner with the array of working electrodes in the integrated sample analyzer of McNeal because the standard size of the electrode bodies makes it possible to easily exchange or rearrange the placement of any of the electrodes in the block, as taught by Metzner (Col. 13, lines 30-32). Such an arrangement also provides a compact design and makes as short a measuring channel as possible, so that the sample quantity remains small, as taught by Metzner (Col. 13, lines 36-42). Further, it would have been obvious to include a means for applying pressure to the junction constraint of Sawyer in the reference electrode assembly of McNeal because the increased pressure serves to unclog the junction constraint and/or reduce erratic junction potentials, as taught by Sawyer (Page 28, last two lines).

Therefore, it would have been obvious to combine McNeal with Metzner and Sawyer to obtain the invention as specified in Claim 1.




**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. Michelle Vestal whose telephone number is (571) 272-0524. The examiner can normally be reached on Monday-Friday, 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rmv  
October 29, 2004

  
NAM NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700